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AN AUSTRALIAN ASTRONOMICAL ASSOCIATION.

"A branch of the British Astronomical Association was inaugurated at a meeting of local members of the parent association, in Sydney, N. S. W., during February, 1895. A thoughtful address was delivered by the president of the branch (Mr. JOHN TEBBUTT, F. R. A. S.), and a large number of nominations were received for membership. Mr. TEBBUTT'S address, which occupied about three-quarters of an hour in delivery, traversed pretty well all the ground which can be covered by amateur observers of the heavens, and included a number of hints to possessors of telescopes as to how they might employ them."

—*The Sydney Herald*.

THE OBSERVATORY OF THE VATICAN.

The *Cosmopolitan Magazine* for March, 1895, p. 599, contains an excellent article by Father J. A. ZAHM, on the observatory—or, rather, observatories—of the Vatican. The article is admirably illustrated with cuts made from photographs lately taken. The observatory staff consists of nine astronomers.

E. S. H.

THE CANALS OF *MARS*, BY MR. J. ORR.

The following paragraphs are copied from the *Journal* of the British Astronomical Association, Vol. V, 1895, p. 209:

"Mr. PETRIE read a paper by Mr. J. ORR, a member of the West of Scotland Branch, on 'The Nature of the "Canals" on *Mars*.' The paper, which had been read at Glasgow at the meeting of the Branch, was to show the almost absolute impossibility of the belief, which at one time somehow obtained popular currency, that the so-called canals were of an artificial character—the work of a supposed Martian race. By ruling grooves on a globe illuminated by a strong light, Mr. ORR calculated that the minimum breadth for visibility of the Martian canals must be about 33 miles. The length of an average canal, as measured on SCHIAPARELLI'S map, is about 2000 miles; and since on our terrestrial canals a minimum depth is required, to insure a constant supply of water at the center (diminished by leakage, evaporation, etc.), a depth of at least 70 feet would be required in the case of such a Martian canal as *Tartarus*. Even granted

that the diminished force of gravity on *Mars* would render the work of excavating a ditch 70 feet deep equal to a terrestrial one of 26 feet, it was calculated that the canals would contain about 1,634,000 of our Suez Canals, and would require an army of 200,000,000 of men, working for 1000 of our years, for their construction. Assuming that the population varies with the surface, since the area of the earth is about $3\frac{1}{2}$ times greater than that of *Mars*, we should get a Martian population of about 409,000,000. All the adult males, and a large number of the women, must, therefore, have engaged in the great work.

“The writer supposed the ‘canals’ to be great fissures caused by the cracking of the surface in contraction due to cooling, the planet having reached a considerably more advanced stage in its life than the Earth.

“A slide having been shown, representing the general canal system as given by SCHIAPARELLI, the President (Mr. E. W. MAUNDER, of the Greenwich Observatory,) said he hoped that Mr. ORR’s statistical, but, nevertheless, amusing and instructive, paper might prove one more nail in the coffin of a very absurd idea, which had certainly got most undue currency — namely, that the canals on *Mars* could possibly be the work of human agents. The mere fact that the whole of the resources of one of the greatest nations in Europe had failed to dig a little ditch some 26 miles long, and, comparatively speaking, only a few feet wide, might, he thought, convince us that the people on *Mars*, supposing there were any, could scarcely excavate 80,000 or 100,000 miles of canals, 40 miles wide.”

CORRECTION TO HUSSEY’S LOG. TABLES.

Page 95: log. sin. $33^{\circ} 44'$, should be 9.74455 in place of 9.74555.
R. H. T.

THE ROSSI-FOREL SCALE OF EARTHQUAKE INTENSITY.

As a ready means of defining the intensity of a shock of earthquake from the ordinary descriptions of its effects, the ROSSI-FOREL scale will be found convenient, and is reprinted from *Archives des Sciences Physiques et Naturelles*, Geneva, February, 1884, Vol. XI, page 148.

In discussing the reports of shocks which occurred between 1850 and 1887, Professor HOLDEN was led to make some addi-